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DEPARTMENT OF AGRICULTURE
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UNITED STATES GRADES FOR ROUGH RICE.

RECOMMENDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE.

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Effective August 1, 1923.

The following grades for the grading and marketing of rough rice are recommended by the Bureau of Agricultural Economics, United States Department of Agriculture.

The grades here recommended are the result of extensive investigations relating to the various phases of the rice industry, including production and milling, conducted by the Bureau of Agricultural Economics, and of suggestions received from rice producers, dealers, and millers who have a knowledge of this cereal. The general quality of the average rice crop, the factors of milling quality, and the trade practices and requirements were each given consideration in arriving at the factors and factor specifications for the grades.

The classification in the grades for rough rice is based on the length of the whole kernels, which is also the basis of the classification for the head rice classes in the United States grades for milled rice.

These grades are not fixed and established under the United States grain standards act at this time, but it is hoped that they will be adopted by all agencies engaged in the handling of rough rice. It is believed that with the voluntary and general support of all interested parties these grades will provide a basis for uniform grading, and will assist materially in the marketing of rough rice.

For the purposes of the United States grades for rough rice:

SECTION 1. *Rough rice.*—Rough rice shall be rice grown in continental United States which contains not less than 50 per cent of kernels

from which the hulls have not been removed, and which may contain not more than 50 per cent of matter other than rice and not more than 10 per cent of cereal grains of a kind or kinds other than rice.

SECTION 2. *Basis of determinations.*—All determinations shall be upon the basis of the lot of grain as a whole, including cereal grains, seeds, and other foreign material.

SECTION 3. *Percentages.*—Percentages, except in the case of moisture, shall be percentages ascertained by weight.

SECTION 4. *Percentage of moisture.*—Percentage of moisture shall be that ascertained by the moisture tester and the method of use thereof described in Handbook, U. S. G. S. A. Form 90, revised September, 1922, issued by the United States Department of Agriculture, Bureau of Agricultural Economics, or that ascertained by any device and method giving equivalent results.

SECTION 5. *Test weight per bushel.*—Test weight per bushel shall be the weight per Winchester bushel as determined by the testing apparatus and the method of use thereof described in Bulletin No. 1065, dated May 18, 1922, issued by the United States Department of Agriculture, or as determined by any device and method giving equivalent results.

SECTION 6. *Damaged kernels.*—Damaged kernels shall be kernels and pieces of kernels of rough rice which have been distinctly damaged by water, insects, or by any other means. Sound broken kernels and kernels of which the hulls only have been damaged shall not be considered as damaged kernels.

SECTION 7. *Heat-damaged kernels.*—Heat-damaged kernels shall be kernels and pieces of kernels of rough rice which have been distinctly discolored by external heat or as a result of heating caused by fermentation.

SECTION 8. *Foreign material.*—Foreign material shall be all matter other than rice.

SECTION 9. *Cereal grains.*—Cereal grains shall be barley, rye, wheat, emmer, spelt, einkorn, corn, grain sorghums, and oats only, and shall not include buckwheat, flaxseed, and wild oats.

SECTION 10. *Seeds.*—Seeds shall be grains, kernels, or seeds, either whole or broken, of any plant other than rice or other cereal grains.

SECTION 11. *Red rice.*—Red rice shall be whole or broken kernels of rice of which the bran is distinctly red or pink in color.

SECTION 12. *Broken hulled kernels.*—Broken hulled kernels shall be split kernels and pieces of kernels which are less than three-fourths the length of the perfect decorticated kernel.

SECTION 13. *Weevily rough rice.*—Weevily rough rice shall be rice in which adult live weevils or other live insects injurious to stored rice, or their live larvæ, or clusters of webby material, are found in a number exceeding 1 in 500 grams of rough rice.

Weevily rough rice shall be graded and designated according to the grade requirements of the grades applicable to such rice if it were not weevily, and there shall be added to and made a part of such grade designation the word "weevily." Information may also be shown on the inspection certificate as to the approximate degree of infestation.

CLASSES OF ROUGH RICE.

SECTION 14. Rough rice shall be divided into classes as follows:

Class I. Long Rough Rice.

This class shall include all long-grain rices, such as those known commercially as Honduras, Carolina Gold, Carolina White, Fortuna, and Edith, and may include not more than 10 per cent of whole kernels of rice of the classes Short Rough Rice and Round Rough Rice, either singly or combined.

Class II. Short Rough Rice.

This class shall include all short-grain rices, such as those known commercially as Blue Rose, Louisiana Pearl, and Early Prolific, and may include not more than 10 per cent of whole kernels of rice of the classes Long Rough Rice and Round Rough Rice, either singly or combined.

Class III. Round Rough Rice.

This class shall include all round-grain rices, such as those known commercially as Japan or Japanese, including Wataribune, Shinriki, Butte, Acadia, Colusa, Onsen, and Calora, and may include not more than 10 per cent of whole kernels of rice of the classes Long Rough Rice and Short Rough Rice, either singly or combined.

Class IV. Mixed Rough Rice.

This class shall be a mixture of any two or more of Classes I, II, and III, but which does not meet the requirements of any one of such classes.

GRADE REQUIREMENTS.

Long Rough Rice.

SECTION 15. *Grades for Long Rough Rice.*—The class Long Rough Rice shall be divided into seven grades, the designations and requirements of which shall be as specified in this section.

No. 1 Long

(*a*) shall be cool and sweet and of good color,

(*b*) shall have a test weight per bushel of at least 43 pounds,

(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 1.5 per cent of damaged kernels, red rice, and foreign material, which total of 1.5 per cent may include no heat-damaged kernels, not more than 1 per cent of kernels damaged other than by heat, not more than 0.5 per cent of red rice, not more than 0.1 per cent of cereal grains, not more than 0.1 per cent of seeds, and not more than 0.2 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 2 per cent of broken hulled kernels, and

(*f*) may contain not more than 1 per cent of whole kernels of rice of other classes.

No. 2 Long
(*a*) shall be cool and sweet, and of good color,
(*b*) shall have a test weight per bushel of at least 41 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 5 per cent of damaged kernels, red rice, and foreign material, which total of 5 per cent may include not more than 3 per cent of kernels damaged other than by heat, not more than 0.1 per cent of heat-damaged kernels, not more than 3 per cent of red rice, not more than 0.2 per cent of cereal grains, not more than 0.3 per cent of seeds, and not more than 0. 5 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 4 per cent of broken hulled kernels, and
(*f*) may contain not more than 2 per cent of whole kernels of rice of other classes.

No. 3 Long
(*a*) shall be cool and sweet, and of good color,
(*b*) shall have a test weight per bushel of at least 39 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 10 per cent of damaged kernels, red rice, and foreign material, which total of 10 per cent may include not more than 5 per cent of kernels damaged other than by heat, not more than 0.2 per cent of heat-damaged kernels, not more than 6 per cent of red rice, not more than 0.3 per cent of cereal grains, not more than 0.5 per cent of seeds, and not more than 1 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 6 per cent of broken hulled kernels, and
(*f*) may contain not more than 4 per cent of whole kernels of rice of other classes.

No. 4 Long
(*a*) shall be cool and sweet, and may be slightly stained,
(*b*) shall have a test weight per bushel of at least 37 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 18 per cent of damaged kernels, red rice, and foreign material, which total of 18 per cent may include not more than 8 per cent of kernels damaged other than by heat, not more than 0.3 per cent of heat-damaged kernels, not more than 10 per cent of red rice, not more than 0.4 per cent of cereal grains, not more than 1 per cent of seeds, and not more than 1.5 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 8 per cent of broken hulled kernels, and
(*f*) may contain not more than 6 per cent of whole kernels of rice of other classes.

No. 5 Long
(*a*) shall be cool and sweet, and may be stained,
(*b*) shall have a test weight per bushel of at least 35 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 30 per cent of damaged kernels, red rice, and foreign material, which total of 30 per cent may include not more than 12 per cent of kernels damaged other than by heat, not more than 0.5 per cent of heat-damaged kernels, not more than 20 per cent of red rice, not more than 0.5 per cent of cereal grains, not more than 3 per cent of seeds, and not more than 2 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 10 per cent of broken hulled kernels, and
(*f*) may contain not more than 10 per cent of whole kernels of rice of other classes.

No. 6 Long
(*a*) shall be cool and may be slightly musty or weathered,
(*b*) shall have a test weight per bushel of at least 32 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 50 per cent of damaged kernels, red rice, and foreign material, which total of 50 per cent may include not more than 20 per cent of kernels damaged other than by heat, not more than 1 per cent of heat-damaged kernels, not more than 30 per cent of red rice not more than 1 per cent of cereal grains, not more than 5 per cent of seeds, and not more than 5 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 15 per cent of broken hulled kernels, and
(*f*) may contain not more than 10 per cent of whole kernels of rice of other classes.

Sample Grade Long
shall be rough rice of the class Long Rough Rice which does not come within the requirements for any of the grades from No. 1 to No. 6, inclusive, or which has any commercially objectionable foreign odor, or is sour, heating, hot, or otherwise of distinctly low quality.

Short Rough Rice.

SECTION 16. *Grades for Short Rough Rice.*—The class Short Rough Rice shall be divided into seven grades, the designations and requirements of which shall be as specified in this section.

No. 1 Short
(*a*) shall be cool and sweet, and of good color,
(*b*) shall have a test weight per bushel of at least 45 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 1.5 per cent of damaged kernels, red rice, and foreign material, which total of 1.5 per cent may include no heat-damaged kernels, not more than 1 per cent of kernels damaged other than by heat, not more than 0.5 per cent of red rice, not more than 0.1 per cent of cereal grains, not more than 0. 1 per cent of seeds, and not more than 0.2 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 2 per cent of broken hulled kernels, and
(*f*) may contain not more than 1 per cent of whole kernels of rice of other classes.

No. 2 Short
(*a*) shall be cool and sweet, and of good color,
(*b*) shall have a test weight per bushel of at least 43 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 5 per cent of damaged kernels, red rice, and foreign material, which total of 5 per cent may include not more than 3 per cent of kernels damaged other than by heat, not more than 0.1 per cent of heat-damaged kernels, not more than 3 per cent of red rice, not more than 0.2 per cent of cereal grains, not more than 0.3 per cent of seeds, and not more than 0.5 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 4 per cent of broken hulled kernels, and
(*f*) may contain not more than 2 per cent of whole kernels of rice of other classes.

No. 3 Short
(*a*) shall be cool and sweet, and of good color,
(*b*) shall have a test weight per bushel of at least 41 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 10 per cent of damaged kernels, red rice, and foreign material, which total of 10 per cent may include not more than 5 per cent of kernels damaged other than by heat, not more than 0.2 per cent of heat-damaged kernels, not more than 6 per cent of red rice, not more than 0.3 per cent of cereal grains, not more than 0.5 per cent of seeds, and not more than 1 per cent of foreign material other than cereal grains and seeds.
(*e*) may contain not more than 6 per cent of broken hulled kernels, and
(*f*) may contain not more than 4 per cent of whole kernels of rice of other classes.

No. 4 Short
(*a*) shall be cool and sweet, and may be slightly stained,
(*b*) shall have a test weight per bushel of at least 39 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 18 per cent of damaged kernels, red rice, and foreign material, which total of 18 per cent may include not more than 8 per cent of kernels damaged other than by heat, not more than 0.3 per cent of heat-damaged kernels, not more than 10 per cent of red rice, not more than 0.4 per cent of cereal grains, not more than 1 per cent of seeds, and not more than 1.5 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 8 per cent of broken hulled kernels, and

(*f*) may contain not more than 6 per cent of whole kernels of rice of other classes.

No. 5 Short

(*a*) shall be cool and sweet, and may be stained,

(*b*) shall have a test weight per bushel of at least 37 pounds,

(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 30 per cent of damaged kernels, red rice, and foreign material, which total of 30 per cent may include not more than 12 per cent of kernels damaged other than by heat, not more than 0.5 per cent of heat-damaged kernels, not more than 20 per cent of red rice, not more than 0.5 per cent of cereal grains, not more than 3 per cent of seeds, and not more than 2 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 10 cent of broken hulled kernels, and

(*f*) may contain not more than 10 per cent of whole kernels of rice of other classes.

No. 6 Short

(*a*) shall be cool, and may be slightly musty or weathered,

(*b*) shall have a test weight per bushel of at least 34 pounds,

(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 50 per cent of damaged kernels, red rice, and foreign material, which total of 50 per cent may include not more than 20 per cent of kernels damaged other than by heat, not more than 1 per cent of heat-damaged kernels, not more than 30 per cent of red rice, not more than 1 per cent of cereal grains, not more than 5 per cent of seeds, and not more than 5 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 15 per cent of broken hulled kernels, and

(*f*) may contain not more than 10 per cent of whole kernels of rice of other classes.

Sample Grade Short

shall be rough rice of the class Short Rough rice which does not come within the requirements for any of the grades from No. 1 to No. 6, inclusive, or which has any commercially objectionable foreign odor, or is sour, heating, hot, or otherwise of distinctly low quality.

Round Rough Rice.

SECTION 17. *Grades for Round Rough Rice.*—The class Round Rough Rice shall be divided into seven grades, the designations and requirements of which shall be as specified in this section.

No. 1 Round

(*a*) shall be cool and sweet, and of good color,

(*b*) shall have a test weight per bushel of at least 46 pounds,

(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 1.5 per cent of damaged kernels, red rice, and foreign material, which total of 1.5 per cent may include no heat-damaged kernels, not more than 1 per cent of kernels damaged other than by heat, not more than 0.5 per cent of red rice, not more than 0.1 per cent of cereal grains, not more than 0.1 per cent of seeds, and not more than 0.2 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 2 per cent of broken hulled kernels, and
(*f*) may contain not more than 1 per cent of whole kernels of rice of other classes.

No. 2 Round
(*a*) shall be cool and sweet, and of good color,
(*b*) shall have a test weight per bushel of at least 44 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 5 per cent of damaged kernels, red rice, and foreign material, which total of 5 per cent may include not more than 3 per cent of kernels damaged other than by heat, not more than 0.1 per cent of heat-damaged kernels, not more than 3 per cent of red rice, not more than 0.2 per cent of cereal grains, not more than 0.3 per cent of seeds, and not more than 0.5 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 4 per cent of broken hulled kernels, and
(*f*) may contain not more than 2 per cent of whole kernels of rice of other classes.

No. 3 Round
(*a*) shall be cool and sweet and of good color,
(*b*) shall have a test weight per bushel of at least 42 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,
(*d*) may contain a total of not more than 10 per cent of damaged kernels, red rice, and foreign material, which total of 10 per cent may include not more than 5 per cent of kernels damaged other than by heat, not more than 0.2 per cent of heat-damaged kernels, not more than 6 per cent of red rice, not more than 0.3 per cent of cereal grains, not more than 0.5 per cent of seeds, and not more than 1 per cent of foreign material other than cereal grains and seeds,
(*e*) may contain not more than 6 per cent of broken hulled kernels, and
(*f*) may contain not more than 4 per cent of whole kernels of rice of other classes.

No. 4 Round
(*a*) shall be cool and sweet and may be slightly stained,
(*b*) shall have a test weight per bushel of at least 40 pounds,
(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 18 per cent of damaged kernels, red rice, and foreign material, which total of 18 per cent may include not more than 8 per cent of kernels damaged other than by heat, not more than 0.3 per cent of heat-damaged kernels, not more than 10 per cent of red rice, not more than 0.4 per cent of cereal grains, not more than 1 per cent of seeds, and not more than 1.5 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 8 per cent of broken hulled kernels, and

(*f*) may contain not more than 6 per cent of whole kernels of rice of other classes.

No. 5 Round

(*a*) shall be cool and sweet, and may be stained,

(*b*) shall have a test weight per bushel of at least 38 pounds,

(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 30 per cent of damaged kernels, red rice, and foreign material, which total of 30 per cent may include not more than 12 per cent of kernels damaged other than by heat, not more than 0.5 per cent of heat-damaged kernels, not more than 20 per cent of red rice, not more than 0.5 per cent of cereal grains, not more than 3 per cent of seeds, and not more than 2 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 10 per cent of broken hulled kernels, and

(*f*) may contain not more than 10 per cent of whole kernels of rice of other classes.

No. 6 Round

(*a*) shall be cool, and may be slightly musty or weathered,

(*b*) shall have a test weight per bushel of at least 35 pounds,

(*c*) may contain not more than 14.5 per cent of moisture,

(*d*) may contain a total of not more than 50 per cent of damaged kernels, red rice, and foreign material, which total of 50 per cent may include not more than 20 per cent of kernels damaged other than by heat, not more than 1 per cent of heat-damaged kernels, not more than 30 per cent of red rice, not more than 1 per cent of cereal grains, not more than 5 per cent of seeds, and not more than 5 per cent of foreign material other than cereal grains and seeds,

(*e*) may contain not more than 15 per cent of broken hulled kernels, and

(*f*) may contain not more than 10 per cent of whole kernels of rice of other classes.

Sample Grade Round

shall be rough rice of the class Round Rough rice which does not come within the requirements for any of the grades from No. 1 to No. 6, inclusive, or which has any commercially objectionable foreign odor, or is sour, heating, hot, or otherwise of distinctly low quality.

Mixed Rough Rice.

SECTION 18. *Grades for Mixed Rough Rice.*—Mixed rough rice shall be graded according to the grade requirements of the class of rough rice which predominates over each other class in the mixture; the grade designation of such rice shall include, successively in the order named, the number of the grade, the word "Mixed," and, in the order of its predominance, the name and approximate percentage of the whole kernels of each class of rice in the mixture.

TABLE 1.—*Grade requirements for Long, Short, and Round Rough Rice (tabulated and abridged).*

Grade No.	Condition and general appearance.	Minimum test weight per bushel.			Maximum limits of—									
						Damaged kernels, red rice, and foreign material.							Broken hulled kernels.	Rice of other classes.
		Long rough rice.	Short rough rice.	Round rough rice.	Moisture.	Total.	Damage, other than heat.	Heat damage.	Red rice.	Cereal grains.	Weed seeds.	Other foreign material.		
		Lbs	*Lbs.*	*Lbs.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1	Shall be cool and sweet and of good color.....	43	45	46	14.5	1.5	1	0.0	0.5	0.1	0.1	0.2	2	1
2	Shall be cool and sweet and of good color.....	41	43	44	14.5	5.0	3	.1	3.0	.2	.3	.5	4	2
3	Shall be cool and sweet and of good color.....	39	41	42	14.5	10.0	5	.2	6.0	.3	.5	1.0	6	4
4	Shall be cool and sweet and may be slightly stained.....	37	39	40	14.5	18.0	8	.3	10.0	.4	1.0	1.5	8	6
5	Shall be cool and sweet and may be stained.....	35	37	38	14.5	30.0	12	.5	20.0	.5	3.0	2.0	10	10
6	Shall be cool and may be slightly musty or weathered.....	32	34	35	14.5	50.0	20	1.0	30.0	1.0	5.0	5.0	15	10
Sample Grade[1].	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.0	.....	.....	50	10

[1] Sample Grade shall be rough rice which does not come within the requirements for any of the grades from No. 1 to No. 6, inclusive, of the class to which it belongs, or which has any commercially objectionable foreign odor, or is sour, heating, or hot, or is otherwise of distinctly low quality.

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